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DIGITAL TRANSFORMATION IN THE AGE OF INDUSTRY 4.0: ACCELERATION OF TRANSFORMATIONAL PERFORMANCE THROUGH BUSINESS MODEL INNOVATION AND CO-CREATION STRATEGY IN INDONESIAN ICT FIRMS

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Digital transformation in the age of industry 4.0: Acceleration of transformational performance through business model innovation and co-creation strategy in indonesian ict firms (Article)

[Transformación digital en la era de la industria 4.0: aceleración del rendimiento de transformación a través de la estrategia de innovación y co-creación de modelos de negocios en empresas de tic de indonesia]

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Abstract

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Industry 4.0 has significant impact in accelerating firm performance across industries. This paper aims to discuss how ICT firms could manage the transformational performance by integrating business model innovations and co-creation strategy. The construction model of transformational performance and co-creation strategy is expected to contribute to the theory of performance and co-creation reviewed in literatures based on the Indonesian ICT phenomenon. Indonesia's ICT Industry has gained the attention to be studied since it is one of the emerging markets with unique market characteristics with numerous opportunities but lacking the digital infrastructure. The digital transformation is required for firms to be able to sustain their business. Measurement on the success of implementing the transformation is one of the key success factors. The construction of the transformational performance variable is driven from the theory of quality management, balance scorecards and digital maturity. The construct could contribute as a reference model to track the firms' transformational performance. In digital transformation and disruptive era, business models and co-creation are key factors to drive performance. Co-creation is one of the business model innovations that is done through collaboration and partnerships. It is also an integrated strategy used in order to perform in the market. To elaborate the model, we develop a prototype using a sample of 35 senior leaders from Indonesian ICT firms. Partial Least Square (PLS) is the statistical tool used to analyze the data foo this study. The findings show that a firm's transformational performance is significantly influenced by business model innovations and co-creation strategy. Further findings show that in digital transformation, a firm cannot fulfill all core capabilities as it requires collaboration and crowd sourcing. Our selected examples are only prototypes of the research model and implications of this study are limited to their particular context. Ultimately, our research model requires further research and validation, which should be done in future studies.

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References (29)

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1 Abdelkafi, N., Makhotin, S., Posselt, T.
Business model innovations for electric mobility-what can be learned from existing business model patterns?

(2013) *International Journal of Innovation Management*, 17 (1), art. no. 1340003. Cited 84 times.
doi: 10.1142/S1363919613400033

View at Publisher

2 Adeniran, J.A., Oniku, A.
Distribution Intensity and Marketing Utility Perception of Consumers of FMCG Products in Lagos State, Nigeria: Moderating Effect of Channel Multiplicity
(2018) *International Journal of Applied Economics, Finance and Accounting*, 3 (1), pp. 37-47.

3 Ahmed, U., Zin, M.L.M., Majid, A.H.A.
Impact of Intention and Technology Awareness on Transport Industry's E-service: Evidence from an Emerging Economy
(2016) *(IJIDB)*, 7 (3), pp. 13-18. Cited 25 times.

4 Ali, A., Haseeb, M.
Radio frequency identification (RFID) technology as a strategic tool towards higher performance of supply chain operations in textile and apparel industry of Malaysia (Open Access)

(2019) *Uncertain Supply Chain Management*, 7 (2), pp. 215-226. Cited 77 times.
http://www.growingscience.com/uscm/Vol7/uscm_2018_22.pdf
doi: 10.5267/j.uscm.2018.10.004

View at Publisher

5 Suryanto, T., Haseeb, M., Hartani, N.H.
The correlates of developing green supply chain management practices: Firms level analysis in Malaysia

(2018) *International Journal of Supply Chain Management*, 7 (5), pp. 316-324. Cited 82 times.
ojs.excelingtech.co.uk/index.php/IJSCM

6 Haseeb, M., Abidin, I.S.Z., Hye, Q.M.A., Hartani, N.H.
(2018) *The*

7 Haseeb, M., Abidin, I.S.Z., Hye, Q.M.A., Hartani, N.H.
The impact of renewable energy on economic well-being of Malaysia: Fresh evidence from auto regressive distributed lag bound testing approach (Open Access)

(2019) *International Journal of Energy Economics and Policy*, 9 (1), pp. 269-275. Cited 70 times.
http://www.econjournals.com/index.php/ijeep/article/download/7229/4119
doi: 10.32479/ijeep.7229

View at Publisher

8 Ahmed, U., Zin, M.L.M., Majid, A.H.A.
Impact of Intention and Technology Awareness on Transport Industry's E-service: Evidence from an Emerging Economy
(2016) *(IJIDB)*, 7 (3), pp. 13-18. Cited 25 times.

9 Amit, R., Zott, C.
Creating value through business model innovation. MIT Sloan Management Review, 53(3), 41-49. Aral (2012) *S., Dellarocas, C., & Godes, D. (2013). Introduction to the Special issue—social Media and Business Transformation: A Framework for Research. Information Systems Research*, 24 (1), pp. 3-13.

10 Basheer, M.F., Siam, M.R.A., Awn, A.M., Hassan, S.G.
Exploring the role of TQM and supply chain practices for firm supply performance in the presence of information technology capabilities and supply chain technology adoption: A case of textile firms in Pakistan (Open Access)

(2019) *Uncertain Supply Chain Management*, 7 (2), pp. 275-288. Cited 25 times.
http://www.growingscience.com/uscm/Vol7/uscm_2018_18.pdf
doi: 10.5267/j.uscm.2018.9.001

View at Publisher

11 Bou-Llusar, J.C., Escrig-Tena, A.B., Roca-Puig, V., Beltrán-Martín, I.
An empirical assessment of the EFQM Excellence Model: Evaluation as a TQM framework relative to the MBNQA Model

(2009) *Journal of Operations Management*, 27 (1), pp. 1-22. Cited 273 times.
doi: 10.1016/j.jom.2008.04.001

View at Publisher

12 Ahmed, U., Zin, M.L.M., Majid, A.H.A.
Impact of Intention and Technology Awareness on Transport Industry's E-service: Evidence from an Emerging Economy
(2016) *(IJIDB)*, 7 (3), pp. 13-18. Cited 25 times.

13 Chesbrough, H.
Business model innovation: Opportunities and barriers. Long range planning, 43(2-3), 354-363. Chesbrough (2010) *H., & Rosenbloom, R. S. (2002). the Role of the Business Model in Capturing Value from Innovation: Evidence from Xerox Corporation's Technology spin-off Companies. Industrial and Corporate Change*, 11 (3), pp. 529-555.

14 Christensen, C.M., Bower, J.L.
Customer power, strategic investment, and the failure of leading firms

(1996) *Strategic Management Journal*, 17 (3), pp. 197-218. Cited 1230 times.

View at Publisher

15 Coombes, P.H., Nicholson, J.D.
Business models and their relationship with marketing: A systematic literature review

(2013) *Industrial Marketing Management*, 42 (5), pp. 656-664. Cited 57 times.
doi: 10.1016/j.indmarman.2013.05.005

View at Publisher

16 D'Aveni, R.A.
(1994) *Hypercompetition–Managing the Dynamics of Strategic Maneuvering*. Cited 1496 times.
New York/Toronto

17 Das, K., Gryseels, M., Sudhir, P., Tan, K.T.
Unlocking Indonesia's Digital Opportunity. McKinsey & Company. Desyllas, P., & Sako, M. (2013). Profiting from business model innovation: Evidence from Pay-As-You-Drive auto insurance
(2016) *Research Policy*, 42 (1), pp. 101-116.

18 Giesen, E., Berman, S.J., Bell, R., Blitz, A.
Three ways to successfully innovate your business model

(2007) *Strategy and Leadership*, 35 (6), pp. 27-33. Cited 82 times.
doi: 10.1108/10878570710833732

View at Publisher

19 Goll, I., Brown Johnson, N., Rasheed, A.A.
Top management team demographic characteristics, business strategy, and firm performance in the US airline industry: The role of managerial discretion

(2008) *Management Decision*, 46 (2), pp. 201-222. Cited 38 times.
doi: 10.1108/00251740810854122

View at Publisher

20 Grissemann, U.S., Stokburger-Sauer, N.E.
Customer co-creation of travel services: The role of company support and customer satisfaction with the co-creation performance

(2012) *Tourism Management*, 33 (6), pp. 1483-1492. Cited 165 times.
doi: 10.1016/j.tourman.2012.02.002

View at Publisher

21 Hafeez, M.H., Basheer, M.F., Rafique, M., Siddiqui, S.H.
Exploring the Links between TQM Practices, Business Innovativeness and Firm Performance: An Emerging Market Perspective
(2018) *Pakistan Journal of Social Sciences (PJSS)*, 38 (2), pp. 485-500. Cited 6 times.

22 Henfridsson, O., Mathiassen, L., Svahn, F.
Managing technological change in the digital age: The role of architectural frames

(2014) *Journal of Information Technology*, 29 (1), pp. 27-43. Cited 60 times.
doi: 10.1057/jit.2013.30

View at Publisher

23 Holmwood, C.
Drama education and dramatherapy: Exploring the space between disciplines

(2014) *Drama Education and Dramatherapy: Exploring the Space Between Disciplines*, pp. 1-183. Cited 6 times.
http://www.taylorandfrancis.com/books/details/9781315869766/
ISBN: 978-131586976-6; 978-041571847-9

24 Ahmed, U., Zin, M.L.M., Majid, A.H.A.
Impact of Intention and Technology Awareness on Transport Industry's E-service: Evidence from an Emerging Economy
(2016) *(IJIDB)*, 7 (3), pp. 13-18. Cited 25 times.

25 Ahmed, U., Zin, M.L.M., Majid, A.H.A.
Impact of Intention and Technology Awareness on Transport Industry's E-service: Evidence from an Emerging Economy
(2016) *(IJIDB)*, 7 (3), pp. 13-18. Cited 25 times.

26 McDonald, M.P., Rowsell-Jones, A.
The Digital Edge: Exploiting Information & Technology for Business Advantage, Gartner. Inc, Stamford.
Monios, J., & Bergqvist, R. (2015). Using a "virtual joint venture" to facilitate the adoption of intermodal transport
(2012) *Supply Chain Management: An International Journal*, 20 (5), pp. 534-548.

27 Mujtaba, M., Jamal, S., Qureshi, J.A., Shaikh, Y.
Human Capital is a Competitive Advantage of Businesses: Analysis of Automobile Firms of Pakistan
(2018) *Asian Themes in Social Sciences Research*, 2 (1), pp. 16-22.

28 Nenonen, S., Storbacka, K.
Business model design: conceptualizing networked value co-creation
(2010) *International Journal of Quality and Service Sciences*, 2 (1), pp. 43-59. Cited 113 times.
doi: 10.1108/17566691011026595
View at Publisher

29 Tovkanets, H.
Lifelong Learning in Enhancing Professional Teacher Training in the European Countries
(2018) *Comparative Professional Pedagogy*, 8 (2), pp. 23-27.

Opción, Año 34, No. 86(2018):2190-2208
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The Role of Corporate Reputation & Distinctive Organization Capability in Developing Business Model Innovation: Case study of Indonesian ICT Firms in Facing Industry Resolution 4.0

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Astract

— Business model innovation is key in facing industry 4.0 where digital technology through Internet and mobile technology influences people's lifestyle. This paper has the objective to provide the antecedents of business model innovation and compare the effects of corporate reputation and distinctive organizational capability in developing business model innovation. The study is based on the digital disruption phenomenon, where established companies are disrupted by the new entries with the new business model that leverages digital capability. The study focuses on information, communication and technology (ICT) of the incumbent companies in developing business model innovations as the second curve in sustaining the business. The ICT industry is an important sector in the development of other industries and has a significant influence on economic growth, which currently relies on emerging markets such as Indonesia. The Indonesian ICT market has unique characteristics where innovation grows rapidly, but infrastructure lacks behind and the market is very competitive. This creates a gap between innovation opportunities and development of digital infrastructure. As for the incumbent firms, the mitigation of risks of the investment of ICT infrastructure and competition with new entries with their new business model and market. Incumbent firms still have the advantage of corporate reputation and are required to develop distinctive capability. However, the study of developing business model innovations for incumbent firms in the market with a focus on corporate reputation is still limited. The current study is an empirical study using a sample of 35 Indonesian ICT

firms. Smart Partial Least Square (SmartPLS) is the analytical approach and solution technique used in the study. Research findings show that the distinctive organization capability has more influence compared to corporate reputation in developing business model innovations. The study implicates on the theory that the development of business model innovations should focus on distinctive organization capabilities rather than relying more heavily on corporate reputation. This means that ICT Incumbent firms are required to transform their capabilities to align with market changes. In terms of management, the study also implicates the urgency in developing distinctive organizational capabilities in respective units, especially in intangible assets. Further research can be explored by expanding the research sample and industry conducting longitudinal study on the transformational model of incumbent firms

Index Terms— Business model Innovation, distinctive organization capabilities, corporate reputation, industry 4.0.

El papel de la reputación corporativa y la capacidad de la organización distintiva en el desarrollo de la innovación de modelos de negocios: estudio de caso de empresas indonesias de TIC ante la resolución de la industria 4.0

Resumen

- La innovación del modelo de negocios es clave para enfrentar a la industria 4.0, donde la tecnología digital a través de Internet y la tecnología móvil influye en el estilo de vida de las personas. Este documento tiene el objetivo de proporcionar los antecedentes de la innovación del modelo de negocio y comparar los efectos de la reputación corporativa y la capacidad organizativa distintiva en el desarrollo de la innovación del modelo de negocio. El estudio se basa en el fenómeno de la interrupción digital, donde las empresas establecidas se ven interrumpidas por las nuevas entradas con el nuevo modelo de negocio que aprovecha la capacidad digital. El estudio se centra en la información, la comunicación y la tecnología (TIC) de las empresas predominantes en el desarrollo de innovaciones de modelos de negocios como la segunda

predictiva de futuro para la información financiera. La propiedad de predicción de la información contable es un avance que requiere un acuerdo con las actividades económicas modernas, especialmente en el campo de la inversión. El indicador de responsabilidad profesional de la contabilidad debe centrarse en el rof the owners and their right to be held accountable or be rewarded in exchange for their efforts. Hence, the important and missing role of the auditor in verifying the availability of accounting information on the predictability and future of this information and evaluating the financial performance of the Department as an indicator of its efficiency in directing and investing the resources available and thus their sustainability, Since the accounting information users rely on the auditor to provide assurance

I. INTRODUCTION

Digital technology has a significant influence in Industry 4.0 as it brings major impact on market changes and competition throughout the industry. New entries become a threat to incumbent firms with new business models that forms new markets and attracts new customers. The phenomenon where the incumbent firms fail to maintain their competitive advantages have been discussed intensively by Christensen (1997) and herein called as disruptive innovation. In industry 4.0, where digital technology needs to be taken with significant consideration, a remarkable example of digital disruption can be found within the ICT sector(Christensen, 1997), especially in the telecommunications industry. Convergences of platforms due to the Internet lead to Over the Top (OTT) to create a substitute product to compete with existing products from incumbent players. OTT could offer an alternative solution to customers with similar products at a cheaper price or even for free. A striking example of digital disruption in telecommunications is the substitution of text messaging and voice services by services such as Whatsapp, Line, WeChat, and Blackberry Messenger. Digital disruption does not only occur in telecommunications, but also in other industries such as the banking industry. Financial technology (fin-tech) services have started to utilize disrupted banking as its core business. However, telecommunications have been found as the industry where incumbent firms are more likely to lose their place because of digital disruption (Loucks, Bradley, Macaulay, Noronha, & Wade, 2015). Telecommunications is critical for a country's competitiveness, as it has positive contributions on the growth of the economy (World Bank, 2018). A correlation between ICT or telecommunication infrastructure, especially digital infrastructure with nation competitiveness was found (IMD, 2017). ICT incumbent

firms play an important role in the development of digital ICT infrastructure, as they already own the infrastructure, capital, customer base, and brand reputation. However, incumbent firms are most likely to be disrupted by new entries (Loucks et al., 2015). They are also required to transform into a digital business in order to sustain. According to the Resources Based View (RBV) theory (Barney, 1991), incumbent firms are required to develop distinctive organization capabilities. Since business model innovation has become an important factor in industry 4.0, the next questions lie on the antecedents in developing business model innovations and whether organizational capabilities or corporate reputation is a higher priority.

All those respective questions are related to the Indonesian ICT digital market as Indonesia is currently at an early stage of digital development (Das, Gryseels, Sudhir, & Tan, 2016). This means that huge opportunities exist, however it does require big investments. Compared to any other countries in the world, Indonesia's digital competitiveness is ranked at 59th globally. There is a gap with Indonesia's competitiveness rank where it is placed on 42nd (IMD, 2017). This gap indicates that there is an opportunity for the Indonesia's ICT digital sector to contribute in the development of nation competitiveness. Hence, the strengthening of Indonesia ICT firms is urgently needed. Another interesting data is found that in terms of innovation growth, Indonesia is recorded as one of the countries where innovation growth is quite high (IMD, 2017). Indonesia is also ranked at 6th place for the number of startup companies in the world (Startup Rangking, 2017). Another indication that shows the rapid growth of Indonesia's innovation is the increasing use of social media and activity on the Internet. In terms of the number of Facebook users, the percentage of e-commerce activities, and length of time spent on the internet, Indonesia is recorded to be higher compared to the United States (Das et al., 2016).

Indonesian incumbent ICT firms can take on the opportunities if they could transform into a digital business by focusing on business model innovation. The transformation could be done by combining and strengthening their strong corporate reputation and develop new distinctive organizational capabilities.

This paper explores the effects of corporate reputation and distinctive organization capability on business model innovations of telecommunication firms in Indonesia. This paper will discuss the empirical study starting with the background, literature review, methodology, results, discussion, conclusion, implications and suggestions for further research.

II. LITERATURE REVIEW

A. Industry Resolution 4.0 and Digital Transformation

Industry resolution 4.0 is known as the conceptual era (Pink, 2005), due to Internet and information technology. Industry 4.0 effects globalization as changes does not only

occur on the market and competition but also on the whole ecosystem (Teece, 2012). The main drivers of industry 4.0 are innovation, collaboration, and integration of processes that are shorter and simpler through the ICT system (Bauer, Hämmerle, Schlund, & Vocke, 2015; Kiel, Müller, Arnold, & Voigt, 2017). In the history of management, industry 4.0 is the modern phenomenon that is close to digital transformation, as shown in figure 1.

Fig. 1. History of Management and indsutry 4.0

In the telecommunication industry, industry 4.0 represents the solution based on the Internet of Things (IoT). The product solution could be fulfilled through collaboration with respective stakeholders to innovate business models through a digitized system (Kagermann, 2015), shared economy (Matzner et al., 2018) and virtualization (Monios & Bergqvist, 2015).

In anticipating the changes due to industry resolution 4.0, the incumbent firms are required to transform their existing business model and the way of doing business on a digital platform as new entries will potentially disrupt their business (Christensen, 1997). The incumbent firms are required to integrate with the existing operation process of digital capabilities (Berman, 2012; Daniel & Wilson, 2003). The firms require digital transformation where dynamic and distinctive organization capabilities are integrated with existing assets. The transformation is defined as the changing paradigm of the firm's activities.

Digital transformation has two sides of model (Eksell & Harenstam, 2017; Markides & Charitou, 2004) other than providing opportunity in generating revenue. It also provides efficiency in the process and speed of decision-making. The opportunity to generate revenue is related to upstream business model collaboration with customers, whereas cost efficiency is related to process and business model collaboration with partners and suppliers. The study on mobile operators shows that the left side is content provider and the right side is customer, while the opera

tor has the role of creating business model innovations (Raivio & Luukkainen, 2011). In practice, McKinsey (Das et al., 2016) has developed 4 (four) digital transformation paths through innovation in product and services, business model, process and all other aspects of the product, business model and process. The best results can be achieved when digital transformation is done through the business model.

Business model innovations are important to boost achievement of competitive advantage (Amit & Zott, 2012). In addition, in the practical world, business models are related to higher operating profits, and have become a topic of discussion among corporate CEOs (IBM Global Service, 2015). It is also found to be the key in the commercialization of technology-based products (Chesbrough, 2010; Chesbrough & Rosenbloom, 2002; Henfridsson, Mathiassen, & Svahn, 2014). In general, there are many studies on business innovation models (Abdelkafi, Makhotin, & Posselt, 2013; Amit & Zott, 2001; Chesbrough, 2007; Giesen, Berman, Bell, & Blitz, 2007; Markides & Charitou, 2004; Massa & Tucci, 2014)]. The development of business models requires the strengthening of capabilities such as brand reputation, capital, and customers (Loucks et al., 2015). It is also required to develop internal competitiveness by expanding the range of complementary capabilities and assets formed around the core technology, related business models (Teece, 1986), and capabilities on the network side combined with network and social capabilities are expected to create distinctive organizational capability.

B. Corporate Reputation

Corporate reputation is defined as an aggregate composition of all previous transactions over the life of the entity, and a snapshot that reconciles images of a company held by all its constituencies to create value to firms (Leonardus W Wasono Mihardjo, Sasmoko, Alamsjah, & Elidjen, 2018; Walsh, Mitchell, Jackson, & Beatty, 2009). It is also part of incumbent firm's strength compare to new entries(Loucks et al., 2015). Study found that corporate reputation is representation of competitive advantage and it can strengthen profit (Gardberg & Fombrun, 2002). Furthermore, it is part of corporate sustainability and value (Lourenço, Callen, Branco, & Curto, 2014) where intangible values such as customer and organization values that could generate revenue (Robinson, Kleffner, & Bertels, 2011).

The antecedent of corporate reputation is related with the company track record and programs including customer loyalty, trust, customer satisfaction related to the products and services, and world mouth of brand and quality (Lourenço et al., 2014; Walsh et al., 2009). Based on the descriptions above, the dimensions used in this study consist of loyalty, trust, quality of products

and services, as well as brand performance.

C. Distinctive Organizational Capabilities

Based on the strategic management framework (Ansoff & McDonnell, 1990), organizational capabilities could be evaluated in relation to current and future performances (Gianos, 2013; Ezebuilo, 2014; Pan, 2014; Jayakumar, 2016; Yanga & Yenb, 2016; Alhawiti & Abdelhamid, 2017; Dandan & Marques, 2017; Anyi, 2017; Muthuselvi, & Ramganesh, 2017; Adedoyin & Okere, 2017; Houcine & Sofiane, 2018; Leonardus Wahyu Wasono Mihardjo, Sasmoko, Alamsjah, & Elidjen, 2018) and provide descriptive plans and prescriptive diagnoses. The role of managers and top management level is necessary to measure, since it has the most impact on most aspects of an organization such as the working environment, management climate, competence and capacity (Ansoff & McDonnell, 1990).

The study of distinctive organizational capability in the digital era consists of three kinds of capabilities: leadership and vision related with digital capabilities, culture and people, and corporate processes and structure (Jacobi & Brenner, 2017). Leadership and vision are the most important aspects in digital transformation, especially in digital leadership (Wasono & Furinto, 2018). Digital leadership is defined as a capability and capacity that is able to encourage creativity by utilizing digital technology to create more value (Sandell, 2013). The culture is defined as the distinctive of organization behavior in value creation. The structure and process are defined as lean processes and operations that are more agile to change. The three capabilities are coupled with governance as a key dimension in this study.

D. Business Model innovation

Business models are defined as the company's effort in creating value through innovation and integration with existing business processes to fulfill customer value (Frankenberger, Weiblen, Csik, & Gassmann, 2013). Business model innovation emerges as an alternative to process and product innovation in digital transformation (Eksell & Harenstam, 2017). The role of managers and entrepreneurs are also significant in creating additional value in a specific time (Amit & Zott, 2010, 2012). Business model innovation is a part of the strategic re-arrangement of business activities to form a new business model with greater value using digital technology. Business models are a new holistic, integrated and systematic way for organizations to provide the operation of innovations in order to create value in a more dynamic environment through collaboration with internal and external stakeholders (Abdelkafi et al., 2013; Zott & Amit, 2007; Zott, Amit, & Massa, 2011). The role of business model innovation depends on the content of business models which is the context in which the development of business models and governance with the defined rules

(Amit & Zott, 2001, 2010, 2012)], Hence, the dimensions used in this study are content innovation, structure innovation, and the delivery of governance innovation.

E. Research Model and Relationship among Variables

Business model innovation is cascaded based on the strategic management perspective (Wheelen & J. David Hunger, 2013) consisting of internal and external factors with distinctive organization capability as an internal factor and corporate reputation an external factor.

Fig. 2. *Research model Framework*

The previous study demonstrates the role of corporate reputation and brand in leveraging the sustainability of competitiveness included in business model innovation (Schaltegger, Lüdeke-Freund, & Hansen, 2012). Another study shows that business model innovations could raise the rank of corporate reputation (Aspara, Lamberg, Laukia, & Tikkanen, 2013) and also bring impact on company value (Lourenço et al., 2014). Based on these past studies, it can be hypothesized:

H1: Corporate reputation has a positive effect on business model innovation.

Distinctive operational capability is important in driving a business model innovation, due to leadership (Schweitzer, 2014), innovation management and

organization (Kuznetsov, 2014). Another Empirical study shows that an organization's capability of learning and market orientation supports the innovation (Hurley, R.F., Hult, 1998).

Those previous studies indicate that distinct operational capabilities have a positive influence on business model innovation.

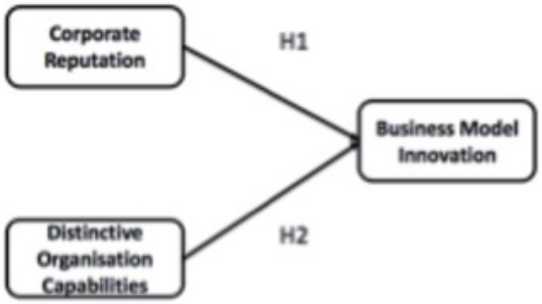


Fig. 3. *Research Model*

Based on the literature study, the following hypotheses is made:

H2: Distinctive organizational capabilities have a positive effect on business model innovation.

III. METHODOLOGY

This study uses quantitative research with Indonesian ICT firms as the unit of analysis and the management of these firms as the observed unit. The population is a combination of all elements that have a series of similar characteristics with a target population of telecommunications network firms in Indonesia including Internet Service Provider (ISP), satellite, tower, and Telkom subsidiaries and affiliates. Based on the documentations, it is known that there are 312 ISP firms, 34 Satellite firms, 27 Towers, and 72 Telkom subsidiaries and Affiliates. Hence, the total number of telecommunication firms in Indonesia is 445 companies. Purposive sampling is used as the sampling method. The sample size is 35 firms to represent the ICT Industry from network providers, service providers and supply chain partners.

Table 1. Distribution respondents

Segment	Board/C Level	VP Levels	GM Level	Mgr Level
Network Provider	3	16	3	1
Service Provider	2	1	3	0
Partners	4	0	1	1
TOTAL	9	17	7	2

Data was collected via self-assessment through an online questionnaire and distributed through Messenger, WhatsApp, and Telegram and email. Respondent profiles are dominated by senior leaders in the company, including directors and senior managers (General Manager level and above) amounted to 95% of respondents. Partial Least Square (PLS) is used as the analytical approach and solution technique for analysis.

IV. RESULT AND DISCUSSION

A. Model Analysis Using PLS

1) Evaluation of Measurement Model (Outer Model)

Analysis on the outer model specifies the relationship between latent variables and their indicators. Tests performed on outer models include:

- Convergent Validity. Based on Average Variance Extracted (AVE). The value of convergent validity is the value of loading factor on the latent variable with its indicators. Expected value> 0.5.
- Composite Reliability. Data that has composite reliability> 0.7 has high reliability.

Table 2. Outer Loading, Cronbach Alpha, Composite Reliability and AVE

Dimension		Outer Loading	Cronbach Alpha	Composite Reliability	AVE
Corporate Reputation			**0.879**	**0.917**	**0.736**
Trust	Trust1	0.723	0.822	0.882	0.652
	Trust2	0.720			
	Trust3	0.678			
	Trust4	0.798			
Product Quality	Product1	0.693	0.713	0.874	0.776
	Product2	0.801			
Brand Reputation	Brand1	0.724	0.879	0.917	0.736
	Brand2	0.808			
	Brand3	0.795			
	Brand4	0.878			
Customer Loyalty	Loyalty1	0.699	0.815	0.890	0.729
	Loyalty2	0.729			
	Loyalty3	0.869			
Distinctive Organization Capability			**0.913**	**0.928**	**0.544**
Digital Leadership	DV1	0.790	0.710	0.873	0.775
	DV2	0.698			
Digital Culture	DC1	0.791	0.797	0.882	0.714
	DC2	0.715			
	DC3	0.751			
Digital Agility	DA1	0.751	0.831	0.899	0.747
	DA2	0.813			
	DA3	0.801			
Governance	Gov1	0.960	0.821	0.916	0.846
	Gov2	0.725			
Business Model Innovation			**0.941**	**0.953**	**0.719**
Content Innovation	CI1	0.874	0.956	0.971	0.919
	CI2	0.966			
	CI3	0.970			
Structural Innovation	SI1	0.874	0.813	0.891	0.735
	SI2	0.880			
	SI3	0.597			
Governance Innovation	Gove1	0.768	0.829	0.920	0.853
	Gove2	0.921			

Table 2 depicts the AVE value> 0.5. Cronbach Alpha> 0.6 and composite reliability> 0.7, indicating that research variables have good reliability for all variables and dimensions.

Table 3. Discriminant Validity

	1	2	3	4	5	6	7	8	9	10	11
1 Brand Reputation	0.858										
2 Content Innovation	0.245	0.959									
3 Customer Loyalty	0.504	0.671	0.854								
4 Digital Agility	0.423	0.588	0.653	0.864							
5 Digital Culture	0.556	0.503	0.622	0.878	0.845						
6 Digital Leadership	0.290	0.606	0.668	0.775	0.684	0.880					
7 Governance	0.327	0.288	0.472	0.506	0.557	0.364	0.920				
8 Governance Innovation	0.488	0.752	0.537	0.635	0.526	0.586	0.220	0.923			
9 Product Quality	0.765	0.329	0.755	0.535	0.571	0.470	0.376	0.455	0.881		
10 Structure Innovation	0.368	0.856	0.754	0.771	0.671	0.747	0.349	0.737	0.512	0.857	
11 Trust	0.576	0.693	0.805	0.576	0.593	0.563	0.369	0.545	0.684	0.724	0.808

Discriminant validity can be calculated based on Table 3. The diagonal bold numbers indicate the square root of AVE. If diagonal bold numbers are bigger than the horizontally listed numbers, it means that the model has good discriminant validity. Only under digital culture does the horizontal listed numbers are slightly higher than diagonal, but the rest of the dimension has good discriminant validity.

The value of convergent validity is the value of the loading factor of outer path analysis. t value > t table (2.04) and p value < 0.05 means each indicator is a valid measurement tool in measuring latent variables.

Table 4. Outer Path Analysis

	Mean	Standard Deviation	T Statistics	P Values	Remarks
Brand1 <- Brand Reputation	0.878	0.056	15.392	0.000	Valid
Brand2 <- Brand Reputation	0.842	0.090	9.427	0.000	Valid
Brand3 <- Brand Reputation	0.782	0.094	8.362	0.000	Valid
Brand4 <- Brand Reputation	0.895	0.047	19.010	0.000	Valid
CI1 <- Content Innovation	0.938	0.040	23.789	0.000	Valid
CI2 <- Content Innovation	0.963	0.017	56.020	0.000	Valid
CI3 <- Content Innovation	0.957	0.024	40.253	0.000	Valid
DA1 <- Digital Agility	0.834	0.093	9.114	0.000	Valid
DA2 <- Digital Agility	0.881	0.038	23.393	0.000	Valid
DA3 <- Digital Agility	0.861	0.049	17.708	0.000	Valid
DC1 <- Digital Culture	0.872	0.041	21.422	0.000	Valid
DC2 <- Digital Culture	0.884	0.038	23.291	0.000	Valid
DC3 <- Digital Culture	0.759	0.089	8.627	0.000	Valid
DV1 <- Digital Leadership	0.895	0.045	20.053	0.000	Valid
DV2 <- Digital Leadership	0.850	0.084	10.313	0.000	Valid
Gov1 <- Governance	0.945	0.021	45.148	0.000	Valid
Gov2 <- Governance	0.880	0.083	10.836	0.000	Valid
Gove1 <- Governance Innovation	0.915	0.034	26.890	0.000	Valid
Gove2 <- Governance Innovation	0.936	0.021	44.711	0.000	Valid
Loyalti1 <- Customer Loyalty	0.824	0.073	11.418	0.000	Valid
Loyalti2 <- Customer Loyalty	0.908	0.032	28.643	0.000	Valid
Loyalti3 <- Customer Loyalty	0.824	0.054	15.174	0.000	Valid
Product1 <- Product Quality	0.853	0.065	13.129	0.000	Valid
Product2 <- Product Quality	0.908	0.020	44.410	0.000	Valid
SI1 <- Structure Innovation	0.908	0.045	20.165	0.000	Valid
SI2 <- Structure Innovation	0.934	0.028	33.173	0.000	Valid
SI3 <- Structure Innovation	0.712	0.111	6.253	0.000	Valid
Trust1 <- Trust	0.778	0.099	7.881	0.000	Valid
Trust2 <- Trust	0.862	0.064	13.664	0.000	Valid
Trust4 <- Trust	0.780	0.100	7.831	0.000	Valid
trust3 <- Trust	0.796	0.054	14.663	0.000	Valid

Table 4 shows that all constructs have a path coefficient score with t-statistics higher than 1.96 and p-value = 0.000 <0.05 which indicates that all constructs have significant association with their dimensions.

B. Structural Model (Inner Model)

In calculating the score of blindfolding, Q2 was obtained for business model innovation = 0.334. If Q2 is greater than zero, it indicates that the structural model has adequate predictive relevance. The evaluation of the inner model can be done in three ways, namely by viewing the value of R2and GoF, as shown in table 5 below

Table 5. R Square and GoF

	R Square	GOF
Corporate Reputation		0.551
Distinctive Operational Capability		
Business Model Innovation	0.541	

According to Tenenhaus (2004) the value of GoF small = 0.1, GoF medium = 0.25 and GoF large = 0.38. From the testing of R2 and GoF, it is seen that the model formed is robust (Tenenhaus, Amato, & Vinzi, 2004). So that hypothesis testing can be done.

Fig. 4. *Complete Path Diagram of Research Model*

Based on the research framework, a structural model can be formulated as following:

$$\eta = 0.332\square + 0.487\square + \square$$

C. *Hypothesis Testing*

Below is the result of hypothesis testing:

Table 6. Testing of Hypothesis

	Path	Standard Deviation	T Statistics	P Values	Remarks
Corporate Reputation -> Business Model Innovation	0.332	0.233	1.422	0.155	Not Supported
Distinctive Organization Capability -> Business Model Innovation	0.487	0.204	2.390	0.017	Supported

* significant at □=0.05 (T statistics > 1.96)

Table 6 indicates that within the degree of confidence of 95% (α=0.05), there is an influence of customer experience and distinctive operational capability on business model innovation amounted to 81.9%, while the 18.1% is affected by other factors that were not examined.

Partially, the relationship between distinctive organization capability and business model innovation has a path coefficient score of 0.487 with t-statistics = 2.390 and p-value = 0.017. This means that H0 is rejected and H1 is accepted. This proves that distinctive organization capability has a positive and significant effect on business model innovation. The path coefficient of corporate reputation to b is 0.199 business model innovation with t-statistics = 1.422 and p-value = 0.155. It means that H0 is accepted while H2 is rejected. There is no significant impact of corporate reputation on business model innovation. The results show that corporate reputation and distinctive operational capability are influential to business model innovation. While business model innovation is more dominantly affected by distinctive organization capability rather than by corporate reputation. These findings are aligned with the theory of a resource-based view where the resources shall be valuable, rare, imperfectly imitable and non-substitutable (Barney, 1991). The result is also supports the disruptive innovation phenomenon where incumbent firms could not only rely on corporate reputation in building innovation (Christensen, 1997; Markides & Charitou, 2004). They require building distinctive organization capability to compete with competitors and new entries. Distinctive organizational capability is more dominantly shaped by digital agility than digital culture and digital leadership. Whereas in innovation culture, governance is also an important aspect but is the least priority compared to others.

Distinctive organization capability is more dominantly affected by digital agility. This is achieved if the company is able to conduct a direct digitalization, able to implement agile operations, and develop digital channel integration. Results of this study support the findings from Schweitzer (2014), Kuznetsov (2014), and Hurley and Hult (1998), which show that distinctive organization capability has significant influence on innovation. Meanwhile, distinctive organizational capability is important in driving a business model innovation due to leadership (Schweitzer, 2014) [41], innovation management and organization (Kuznetsov, 2014) [28].

The findings are also a reminder for the incumbent firms not rely on existing capabilities such as corporate reputation, capital and customer bases (Loucks et al., 2015). Whereas currently, the existing strong capabilities are used develop distinctive organizational capabilities in order to create a business model

innovation.

V. CONCLUSION, IMPLICATION AND FURTHER STUDY

A. Conclusion

Based on the results, it can be concluded that distinctive operational capability and corporate reputation are influencing the development of business model innovation in telecommunication firms in Indonesia. The innovation is more dominantly formed by distinctive organization capability rather than corporate reputation, which is aligned with the disruptive innovation phenomenon. The phenomenon covers how incumbent firms are required to innovate and build distinctive capabilities to sustain the business and build value creation.

The findings have practical implications on business managements, as the development of business model innovation needs to be based on the strong and unique organization capability. Distinctive organization capability is primarily built based on digital agility, digital culture and digital leadership in facing industry 4.0 which are factors that are important in transforming digital capability.

Further studies can be explored with a more extended sampling, industry and as well as markets outside of Indonesia. Longitudinal studies should also be conducted to ensure that business model innovations continue to have significant contribution to firms.

REFERENCES

Abdelkafi, N., Makhotin, S., & Posselt, T. (2013). Business Model Innovations for Electric Mobility — What Can Be Learned From Existing Business Model Patterns? International Journal of Innovation Management, 17(01), 1–41.

Adedoyin, O., & Okere, E. (2017). The Significance of Inclusion Concept in the Educational System as Perceived by Junior Secondary School Teachers: Implications for Teacher Training Programmes in Botswana. Global Journal of Social Sciences Studies, 3(1), 13-28.

Alhawiti, M. M., & Abdelhamid, Y. (2017). A Personalized e-Learning Framework. Journal of Education and e-Learning Research, 4(1), 15-21.

Amit, R., & Zott, C. (2001). Value Creation in E-Business. Strategic Management Journal, 22, 493–520.

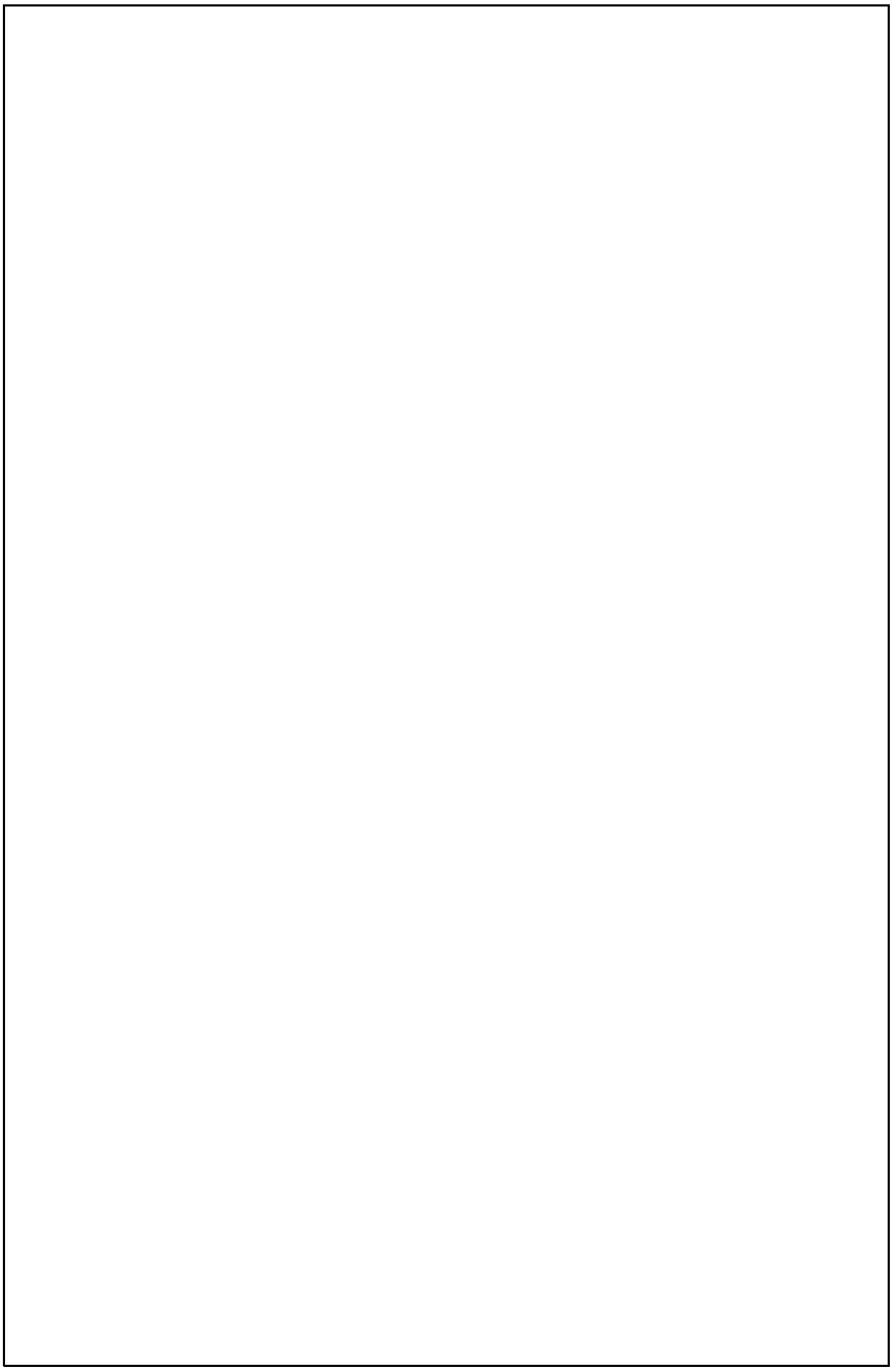
Amit, R., & Zott, C. (2010). Business Model Innovation: Creating Value In Times Of Change. Universia Business Review (Vol. 3).

Amit, R., & Zott, C. (2012). Creating Value Through Business Model Innovation. MIT Management Review, 53(3), 41–50.

Ansoff, H., & McDonnell, E. (1990). Implanting Strategic Management, 2nd Edition (2nd Editio). New York: Prentice Hall.

Anyi, E. M. E. (2017). The Role of Guidance and Counselling in Effective Teaching and Learning in Schools: The Cameroonian Perspective. International Journal of Educational Technology and Learning, 1(1), 11-15.
Aspara, J., Lamberg, J. A., Laukia, A., & Tikkanen, H. (2013). Corporate business model transformation and inter-organizational cognition: The case of nokia. Long Range Planning, 46(6), 459–474.
Barney, J. (1991). Firm Resources and Sustained Competitive Advantage. Journal of Management, 17(1), 99–120.
Bauer, W., Hämmerle, M., Schlund, S., & Vocke, C. (2015). Transforming to a Hyper-connected Society and Economy – Towards an "Industry 4.0." Procedia Manufacturing, 3(Ahfe), 417–424.
Berman, S. J. (2012). Digital transformation: Opportunities to create new business models. Strategy and Leadership, 40(2), 16–24.
Chesbrough, H. (2007). Business model innovation: It's not just about technology anymore. Strategy and Leadership, 35(6), 12–17.
Chesbrough, H. (2010). Business model innovation: Opportunities and barriers. Long Range Planning, 43(2–3), 354–363.
Chesbrough, H., & Rosenbloom, R. S. (2002). The role of the business model in capturing value from innovation : evidence from Xerox Corporation ' s technology spin-off companies. Industrial and Corporate Change, 11(3), 529-555.
Christensen, C. M. (1997). Innovator ' s Dilemma. Harvard Business School Press.
Dandan, M. M., & Marques, A. P. (2017). Higher Education Leadership and Gender Gap in Jordan. Asian Development Policy Review, 5(3), 131-139.
Daniel, E. M., & Wilson, H. N. (2003). The role of dynamic capabilities in e-business transformation. European Journal of Information Systems, 12(4), 282–296.
Das, K., Gryseels, M., Sudhir, P., & Tan, K. T. (2016). Unlocking Indonesia ' s digital opportunity, (September), 1–28.
Eksell, A., & Harenstam, A. (2017). Business Model Innovation for a Digital Future: A Two-sided Single Case Study of the Drivers, Opportunities, and Barriers of Business Model Innovation in a Digitalization Context, 158. Retrieved from http://publications.lib.chalmers.se/records/fulltext/250572/250572.pdf
Ezebuilo, U. (2014). Does higher education reduce poverty among youths in Nigeria?. Asian Economic and Financial Review, 4(1), 1-19.
Frankenberger, K., Weiblen, T., Csik, M., & Gassmann, O. (2013). The 4I-framework of business model innovation : an analysis of the process phases

and challenges. International Journal of Product Development, 18(Numbers 3-4), 1–18.
Gardberg, N. A., & Fombrun, C. J. (2002). The Global Reputation Quotient Project: First Steps Towards a Cross-Nationally Valid Measure of Corporate Reputation. Corporate Reputation Review, 4(4), 303–307.
Gianos, J. F. (2013). A Brief Introduction to Ansoffian Theory and the Optimal Strategic Performance-positioning Matrix on Small Business (OSPP). Journal of Management Research, 5(2), 107–117.
Giesen, E., Berman, S. J., Bell, R., & Blitz, A. (2007). Three ways to successfully innovate your business model. Strategy and Leadership, 35(6), 27–33.
Henfridsson, O., Mathiassen, L., & Svahn, F. (2014). Managing technological change in the digital age: The role of architectural frames. Journal of Information Technology, 29(1), 27–43.
Houcine, B., & Sofiane, M. (2018). Higher Education Quality Management: Evidence from Adrar University. Asian Journal of Economic Modelling, 6(1), 83-89.
Hurley, R.F., Hult, G. T. (1998). Innovation_Market_Orientation_and_Organization Learning: An Integration and Empirical Examination. Journal of Marketing, 62(July 1998), 42–54
IBM Global Business Service (2015). Digital Transformation: Creating New Business Models Where Digital Meets Physical. [online] Available at: https://www-935.ibm.com/services/us/gbs/thoughtleadership/pdf/us_ibv_digita_transformation_808.PDF.
IMD. (2017). IMD World Digital Competitiveness Ranking 2017, 180.
Jacobi, R., & Brenner, E. (2017). How large corporations survive digitalization. In Digital Marketplaces Unleashed (pp. 83–97).
Jayakumar, R. (2016). Opinion of the University Teachers towards Educational Television Programmes. American Journal of Education and Learning, 1(1), 45-52.
Kagermann, H. (2015). Change through digitization-value creation in the age of industry 4.0. In Management of Permanent Change (pp. 23–32).
Kiel, D., Müller, J. M., Arnold, C., & Voigt, K.-I. (2017). Sustainable industrial value creation: Benefits and challenges of industry 4.0. International Journal of Innovation Management, 21(8), 1–21.



Kuznetsov, N. (2014). Management innovation companies based business cost indicators. Asian Social Science, 10(17), 101–107.

Loucks, J., Bradley, J., Macaulay, J., Noronha, A., & Wade, M. (2015). Digital Vortex: How Digital Disruption is Redifining Industries. Global Center for Digital Business Transformation, (June), 1–24.

Lourenço, I. C., Callen, J. L., Branco, M. C., & Curto, J. D. (2014). The Value Relevance of Reputation for Sustainability Leadership. Journal of Business Ethics, 119(1), 17–28.

Markides, C., & Charitou, C. D. (2004). Competing with dual business models: A contingency approach. Academy of Management Executive, 18(3), 22–36.

Massa, L., & Tucci, C. L. (2014). Business Model Innovation. In Oxford Handbooks Online (pp. 1–25).

Matzner, M., Büttgen, M., Demirkan, H., Spohrer, J., Alter, S., Fritzsche, A., … Neely, A. (2018). Digital transformation in service management. Journal of Service Management Research, 2(May), 2–21.

Mihardjo, L. W. W., Sasmoko, Alamsjah, F., & Elidjen. (2018). The Role of Distinctive Organization Capability and Corporate Reputation in Formulating Co-Creation Strategy in the Age of Industry 4 . 0 : Study on Indonesian Telecommunication Firms. The Journal of Social Sciences Research, 2(Special issue), 842–850.

Mihardjo, L. W. W., Sasmoko, S., Alamsjah, F., & Elidjen, E. (2018). the Role of Distinctive Organisational Capability in Formulating Co-Creation Strategy and Business Model Innovation. Polish Journal of Management Studies, 18(2), 197–208.

Monios, J., & Bergqvist, R. (2015). Using a "virtual joint venture" to facilitate the adoption of intermodal transport. Supply Chain Management, 20(5), 534-548.

Muthuselvi, L., & Ramganesh, E. (2017). Use of e-Governance by Administrators of Higher Learning Institutions. International Journal of Emerging Trends in Social Sciences, 1(2), 68-73.

Pan, C. Y. (2014). Effects of Reciprocal Peer-Questioning Instruction on EFL College Students English Reading Comprehension. International Journal of English Language and Literature Studies, 3(3), 190-209.

Pink, D. (2005). A Whole New Mind : Why Right-Brainers Will Rule The Future. Penguin Group (USA) Inc. Retrieved from http://www.danpink.com/wnm.html

Raivio, Y., & Luukkainen, S. (2011). Mobile networks as a two-sided platform - case Open Telco. Journal of Theoretical and Applied Electronic Commerce Research, 6(2), 77–89.

Robinson, M., Kleffner, A., & Bertels, S. (2011). Signaling Sustainability Leadership: Empirical Evidence of the Value of DJSI Membership. Journal of Business Ethics, 101(3), 493–505.
Sandell, S. (2013). Digital leaDership how Creativity in Business Can propel your BranD & Boost your results. Rochester, UK: Allen house publishing Company limited.
Schaltegger, S., Lüdeke-Freund, F., & Hansen, E. G. (2012). Business cases for sustainability: the role of business model innovation for corporate sustainability. International Journal of Innovation and Sustainable Development, 6(2), 95–119.
Schweitzer, J. (2014). Leadership and innovation capability development in strategic alliances. Leadership & Organization Development Journal, 35(5), 442–469.
Startup Ranking (2018). Countries - With the top startups worldwide. [online] StartupRanking. Available at: https://www.startupranking.com/countries.
Teece, D. J. (1986). Profiting from technological innovation :Implications for integration, collaboration and Research Policy. Research Policy, 15(February), 285-305.
Teece, D. J. (2012). Dynamic Capabilities: Routines versus Entrepreneurial Action. Journal of Management Studies, 49(8), 1395–1401.
Tenenhaus, M., Amato, S., & Vinzi, V. E. (2004). A global Goodness– of– Fit index for PLS structural. Proceedings of the XLII, 1–4.
Walsh, G., Mitchell, V. W., Jackson, P. R., & Beatty, S. E. (2009). Examining the antecedents and consequences of corporate reputation: A customer perspective. British Journal of Management, 20(2), 187–203.
Wasono, L. W., & Furinto, A. (2018). The effect of digital leadership and innovation management for incumbent telecommunication company in the digital disruptive era. International Journal of Engineering and Technology, 7(June), 125–130.
Wheelen, T. L., & J. David Hunger. (2013). Strategic Management and Business Policy Toward Global Sustainability (13th Editi). Boston: Pearson
World Bank (2018). Contribution of Information and Communication Technologies to Growth. [online] Available at: http://hdl.handle.net/10986/15059..
Yanga, J. Y., & Yenb, Y. C. (2016). College Students' Perspectives of E-Learning System Use in High Education. Asian Journal of Education and Training, 2(2), 53-62.
Zott, C., & Amit, R. (2007). Business Model Design and the Performance of Entrepreneurial Firms. Organization Science, 18(2), 181–199.
Zott, C., Amit, R., & Massa, L. (2011). the Business Model: Recent Developments and Future Research the Business Model: Recent Developments and

Future Research the Business Model: Recent Developments and Future Research. Retrieved from http://ssrn.com/abstract=1674384

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